WHAT IS CLAIMED IS:

1. A polyphase inverter comprising;

a first conductor;

a second conductor;

M phases, each phase comprising N inverters, each inverter comprising two inverter inputs, an inverter output, a first node coupled to the first conductor and a second node coupled to the second conductor; and

M transformers, each transformer comprising N transformer inputs and a transformer output, each of the N inverter outputs from each phase coupled to each of the N inputs of an associated one of the M transformers.

2. The polyphase inverter of claim 1 wherein M = 3.

3. The polyphase inverter of claim 1 wherein the each of the M transformer outputs is configured to drive an electric motor.

4. The polyphase inverter of claim 1, wherein N = 3.

5. The polyphase inverter of claim 4, wherein M = 3.

6. The polyphase inverter of claim 1, wherein each inverter comprises two insulated-gate bipolar transistors.

7. The polyphase inverter of claim 1, wherein each inverter comprises two metal-oxide-semiconductor field effect transistors.

8. The polyphase inverter of claim 1, wherein each of the M transformers comprises N cores.

9. The polyphase inverter of claim 1, wherein each of the M transformers comprises N toroids.

10. The polyphase inverter of claim 1, wherein each of the M transformers comprises a plurality of center-tapped transformers.

11. The polyphase inverter of claim 1, further comprising a logic circuit comprising 2 x M x N outputs, each output coupled to one of the 2 x M x N inverter inputs.

12. The polyphase inverter of claim 11 wherein the logic circuit is used to provide PWM signals to the inverters.

13. A polyphase inverter comprising:

logic circuitry;

a first conductor for coupling to a first terminal of a DC power source;

a second conductor for coupling to a second terminal of the DC power source;

M phases, each phase comprising N subphases, each subphase comprising two transistors coupled in an inverter configuration, an first node coupled to the first conductor, a second node coupled to the second conductor, two inverter inputs coupled to the logic circuitry, and an inverter output; and

M transformers, each transformer comprising N transformer inputs, the N transformer inputs of each transformer being coupled to the N inverter outputs from an associated one of the M phases, and a transformer output for coupling to a load.

14. The polyphase inverter of claim 13 wherein M = 3.

15. The polyphase inverter of claim 14 wherein the three transformer outputs are configured to supply power to an electric motor.

16. The polyphase inverter of claim 15 wherein the M transformer outputs are configured to supply power to an electric motor.

17. The polyphase inverter of claim 13 wherein the transistors comprise insulated gate bipolar transistors.

18. The polyphase inverter of claim 13 wherein the transistors comprise metal-oxide-semiconductor field effect transistors.

19. The polyphase inverter of claim 13 wherein each transformer comprises N cores.

20. The polyphase inverter of claim 13 wherein each transformer comprises N toroids.

21. The polyphase inverter of claim 13 wherein each transformer comprises at least one center-tapped transformer.

22. The polyphase inverter of claim 13 wherein each transformer output is configured to drive a phase of an electric motor comprising M phases.

23. The polyphase inverter of claim 13 wherein each transformer multiplies a switching frequency associated with an output of the subphases by N.

25. The polyphase inverter of claim 23 wherein each transformer divides the maximum voltage step associated with the output of the subphases by N.

26. A system for driving an electric motor, comprising;

a polyphase inverter comprising a first conductor, a second conductor, M phases wherein each phase comprises N inverters, and wherein each inverter comprises two inverter inputs, an inverter output, a first node coupled to the first conductor and a second node coupled to the second conductor, the polyphase inverter further comprising M transformers, wherein each transformer comprises N transformer inputs and a transformer output, and wherein each of the N inverter outputs from each phase is coupled to each of the N inputs of an associated one of the M transformers; and

an electric motor comprising M phases, each phase comprising an input, the output of each transformer coupled to the input of each phase of the electric motor.

27. The system of claim 26 wherein the electric motor comprises a DC brushless electric motor.

28. The system of claim 27 wherein the motor is coreless.

29. The system of claim 28 wherein the electric motor comprises three phases.

30. The system of claim 26 wherein the electric motor comprises three phases.